

THE
SPIDERS
of the
NORTHERN STATES
by
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By EDWARD KNOBEL

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INTRODUCTION.

The particular differences between the lower animals are generally but little observed. It is, therefore, well, as introductory to the study of a certain set of animals, to observe the place they occupy in the systematic arrangement of Natural History. This draws the attention of the student to their peculiarities, and, at the same time acquaints him with all related and resembling families.

The animal world has been divided into two parts,—animals without a backbone (*Invertebrate*) and those with a backbone (*Vertebratæ*). The first part reaches from the lowest infusoria, hardly distinguishable from plant life, to the most perfect insect. It is divided into several classes, of which the most highly developed is that of jointed animals (*Arthropoda*). The bodies of these are encased in a series of rings, variously grouped and jointed together, which serve instead of bones to keep the body in form. This class consists of three orders,—the *Myriopoda* or Centipedes, with a head and a row of equal rings, many legs and no wings; the *Insecta* or true insects, with the rings grouped in three parts, head, breast part and body part. All have six legs, a pair of feelers, (*antennæ*) in their faces between the eyes, and most of them have wings.

The order of the *Arachnida*, spider-like animals, is placed between the myriopods and insects. They have eight legs, no feelers between their eyes, but often a pair of leg-like feelers from their mouth parts (*palpi*) and no wings. The short-legged mites (*Acarina*) and long-legged harvestmen (*Phalangidæ*) have their head, chest and body part united to an oval-shaped body. The scorpions have a pair of

pincers on the end of their feelers. The true spiders (*Araneina*) have the rings grouped in two parts, the head and chest part are grown together and the body part distinctly separated. The rings are skin-like, soft and but slightly visible. They mostly have eight, but sometimes, six simple eyes, and differ from all other animals by having several spinning warts at the end of their bodies and two poison conducting fang claws in their jaws.

Their poison fangs, their activity by night and their somewhat disagreeable appearance and movements have caused a prejudice against spiders which they do not deserve. They are harmless and really useful as destroyers of numberless flies and mosquitoes. Their bite is truly poisonous to insects; whether also, to the higher animals or man, is not surely known. The peculiar mouth parts of spiders make it impossible for most of them to bite large objects. In regard to the poisonous effect on insects, it is necessary only to observe a cricket on a grass spiders' web. The cricket may be several times the size and strength of the spider; a few seconds after the first bite it is as helpless as a mouse in a cat's paws.

An insect develops through several forms, often very unlike the adult, as, for example, the egg, caterpillar, pupa state must come before the perfect, full-grown butterfly evolves. None but the bee and wasp family seem to take any interest in their offspring more than laying their eggs in places where their grubs may feed when hatched.



The spider, however, packs her eggs in a weather-proof bag, which she hangs up in her web or carries about with her. The young come out of the egg, not as grubs, but as perfect, little spiders, grow with age, and may become several years old. The mother carries her young on her back, or builds a tent for them and takes care of them till they are large enough to shift for themselves, somewhat as a hen does for her chickens.

Spiders, like most rapacious animals, live solitary, except in pairing time. The female, generally the stronger, kills and eats the male, whenever she can get one. When one spider meets another it is a sure fight to the death. They resemble cats in character and habits; some wait patiently for hours for an insect to become entangled in their webs; others creep up to their victims, now and then halting, watching for an opportunity, and—calculating the distance—suddenly jumping on them. They are as fierce and bloodthirsty as a cat in attacking a weaker antagonist, and as cowardly in shrinking and retreating from a dangerous foe like a bee or wasp.

The spiders have been divided into two groups, the first containing the roving spiders which make no webs for catching their prey. These spiders are found wandering in the grass, under stones and wood-piles, on bushes, or sitting before their holes catching passing insects. Some of them spin webs for the protection of their eggs and young, for their dwellings, to change their skins, or to hibernate, while others spin tubes under stones in holes, etc. These spiders also spin threads in falling or jumping.



Tube web.



Agalena.



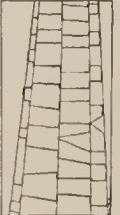
Theridion.



Epeira.



Uloborus.



Dictyna.

The second group contains the sitting spiders, which weave a net to catch their prey and remain on or near it, to watch. Each kind constructs its net on a different plan. The grass spider spins an horizontal



Net of Grass Spider.

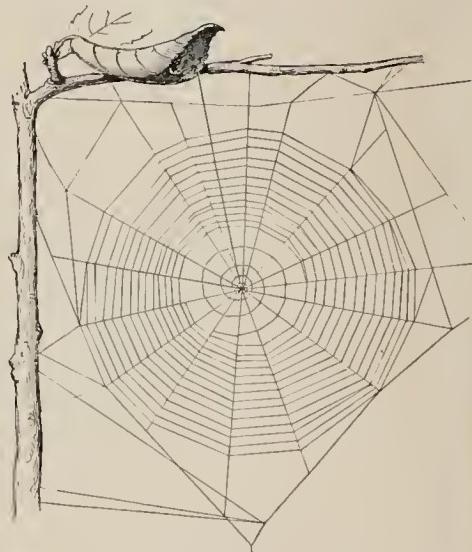


Web of Hous. Spider.

close-woven bag net, with a tube leading sideways, or below it, in which he watches for, or eats his victims. If he meets a too formidable customer, he slides out on the other end of the tube and hides in the grass till the danger is passed. This is called a funnel web.

The common house spider makes a small, mostly triangular bag net with threads running above and below it in all directions and watches it from some convenient place, hanging back downwards on some threads in the web, which is called a cobweb. *Epeira*, the orb or wheel-weavers, construct a perpendicular net. It is made of strong threads spread like the spokes of a wheel, covered with fine, adhesive thread, running spiral-like from the center to the outer edge. The spider watches from the center or from some outside curled-up leaf. *Uloborus* makes

directions and watches it from some convenient place, hanging back downwards on some threads in the web, which is called a cobweb. *Epeira*, the orb or wheel-weavers, construct a perpendicular net. It is made of strong threads spread like the spokes of a wheel, covered with fine, adhesive thread, running spiral-like from the center to the outer edge. The spider watches from the center or from some outside curled-up leaf. *Uloborus* makes



Web of Epeira.

a similar net, but places it horizontally, or slanting. The spiral thread is curly and differently put on.

The identification of spiders offers many difficulties. The individuals often vary in color and size. The males are sometimes not half the size of the females, and differ from them in color and markings. The markings are often faint and differ in various moultings. The scientific distinctions are based on the sexual organs; the end knob of the feelers of the male; the number of claws on their feet,—all, objects too minute to serve as distinctions to the every-day observer.

The eyes and their position form the principal means of finding the families. They are differently placed in each kind. Some kinds have large and small eyes, others have several protruding eyes, as if raised on warts. The grouping is important, also, as some of the species have all their eyes in a close bunch, or a pair, while others have them scattered far apart.

The student must observe the eyes from full front view, and must notice whether they are placed in two or three horizontal rows, also, whether these rows are straight, curved upwards, or bent downwards.



Attus.



Lycosa.



Dolomedes.



Agalena.



Epeira.

Observe that in *Attus* the large eyes are in the lower row, while in *Lycosa* the small eyes are in this position. In *Attus* the rows curve upwards; in *Lycosa* they are straight; in *Agalena* they are bent downwards. The difference between *Lycosa* and *Dolomedes* is,—in the first, the four large eyes form almost a square; in the second, the two eyes of the upper row are far apart. In *Epeira* the two eyes on each side are close together.

Next to the eyes the length of the legs gives some aid in identification. The first pair of legs are the longest in some kinds; in others, the fourth pair. The third pair are generally the shortest.

Of the small kinds, belonging mostly to the *Theridiidæ*—and easily confounded with the young of others—those of less than $\frac{1}{8}$ inch have been left out as too minute to recognize.

To preserve collected spiders. They are easily killed by the fumes of a sulphur match in a tumbler. They cannot be pinned like other insects, as they shrivel in drying and lose their shape. They may be kept in alcohol but many lose their color and show marks which do not appear when alive. They keep well in an over-strong solution of table salt, in well corked bottles.

The drawings of spiders with legs are from the living specimens; those where only the body parts are represented are from different books on spiders. The drawings in these have been made mostly from preserved spiders on which the faint patterns have often faded, and other patterns made visible which the living spider does not show.

It is necessary to make allowance for variations in different specimens, see for example, *Lycosa nigroventris*, and *L. ruricola*; the three drawings show the same spots and markings, but in different size. In a few other kinds the difference may be still greater.

Those who wish to know more about the spiders, I would refer to the publications of Prof. N. M. HENTZ, J. H. EMERTON, HENRY C. McCOOK, COUNT E. KEYSERLING, G. W. and E. G. PECKHAM.

CLASSIFICATION OF SPIDERS.

The spiders are divided into two groups:—

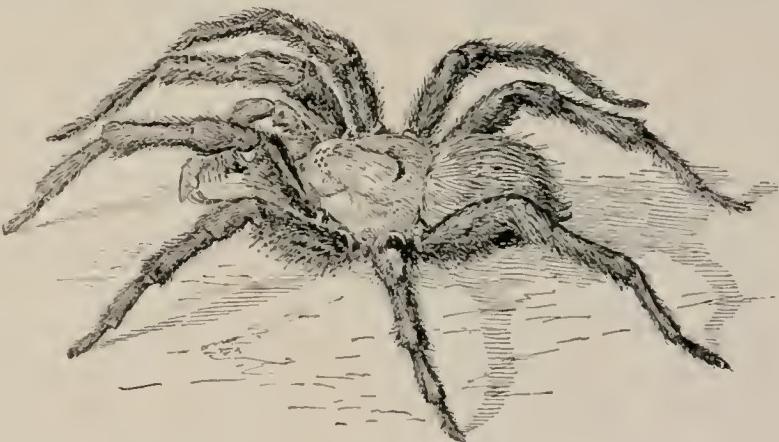


Fang-claws.

1. Spiders with four breathing holes, or lung-slits on the fore part of their bellies, and their mouth parts with the poison fang-claws working up and downwards pick-axe like.
2. Spiders with two lung-slits on the fore part of their bellies and their fang-claws working sideways, pincers-like.

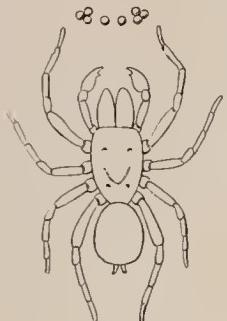
FIRST GROUP.

The first group contains Southern spiders, Tarantula and Trap-door spiders. Our largest spider, the Tarantula (*Mygale hentzii*) lives in the Southwestern states. This group is represented in the Northern states by one kind only.



Tarantula.

Atypus niger. $\frac{3}{4}$ inch long. Deep black. Head flat and horn-like, marked with three impressed dots. The legs short. It dwells in silk-covered tubular holes underground. Spiders of this group have eight eyes.



Atypus niger.

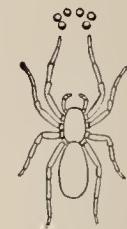
The *Dysderidæ* form an intermediate group, with four lung-slits; but the claws working sideways, and only six eyes. They live in silk tubes under stones.

Dysdera interita. $\frac{5}{8}$ inch long. Rust-colored.

Pylaris bicolor. $\frac{3}{8}$ inch long. Dark brown. Body part and first two pairs of legs black.



Dysdera interita.



Pylaris bicolor.

SECOND GROUP.

Eyes unequal in size.

Build no webs to catch their prey

in three or four rows.

on face and forehead. Those of the lower row always the smallest and the four in center the largest. The legs are long and the last pair the longest - - - - - (Page 13) *Lycosidæ*.



the outer eyes far backwards on the side of the head; the largest eyes in the center of the lowest row. Head broad in front. Legs short; first and fourth pairs longest - - - - - (Page 23) *Attidæ*.



eyes in two rows.

sometimes appearing unequal, the pupils of the outside eyes protruding.

The first and second pairs of legs the longest; the two hind pairs short - - - - - (Page 27) *Thomisidæ*

Eyes nearly equal in size.

Build no webs to catch their prey.



eyes in two upward curved rows. Body broad and flat. The first two pairs of legs the longest; crab-like - - - - . - (Page 27) *Thomisidæ*

eyes of the lower row downward curved. Body and legs long. Fourth and first pairs legs the longest. Mostly dark colored; found wandering on the ground. Resembles the next - - - - - (Page 31) *Drassidæ*



eyes of the lower row upward curved. Body and legs long. Fourth and first pairs of legs the longest. Mostly light colored; live in tubes spun in bushes and shrubs. Resemble the last - - - - - (Page 33) *Clubionidæ*



Eyes equal, in three rows.

Build webs to catch their prey.

Body and legs long. Fourth and second pairs legs longest. They build funnel-shaped webs in grass or low shrubs - - - - - (Page 34) *Agelenidæ*



Eyes equal, in two rows; two outside eyes close together.	Build webs to catch their prey.	
all eyes in a close cluster on the forehead, far from mouth parts.	Body mostly egg-shaped or globular. Legs long. Webs irregular (Page 36) <i>Theridiidae</i>	
eyes loosely clustered, the side eyes far from the central ones; the lower near to the mouth parts.	Body mostly globular or egg-shaped. Legs medium long. Webs regular, perpendicularly placed - - - (Page 43) <i>Epeiridae</i>	
Eyes equal; outside eyes distant. Legs long.		
body long egg-shaped. Web perpendicular	- (Page 53) <i>Tetragnathidae</i>	
body oblong, flat, a brush of hair on next to last joint. Web horizontally placed	- - - - - - - - - (Page 54) <i>Ciniflonidae</i>	
Eyes unequal.		
middle one very small; in two clusters of three	- - - (Page 43) <i>Pholcus</i>	
Eyes, six.		
in two bunches of three; equal	- - - - (Page 43) <i>Spermaphora</i>	
in three pairs of two; equal	- - - - - (Page 42) <i>Scytodes</i>	
in three pairs of two; unequal	- - - - - (Page 54) <i>Hypfiotes</i>	
	(12)	

THE WOLF OR ROVING SPIDERS.—*LYCOSIDÆ.*

Our largest Spiders belong to this family. They build no webs to catch their prey, and hunt in the grass, under stones, everywhere for their victims, and murder them by sheer force in true highwayman style. Some, however, weave tubes under stones for their dwellings, to change their skins, or for the winter. *Lycosa* carries her egg-sack along with her on her hunting excursions, fastened to her tail-end, and the young, when hatched, crawl on her back and stay there till large enough to shift for themselves. If danger threatens, they will disperse in all directions, but the mother will stay and fight for them to the end. *Dolomedes* carries her egg-sack in her mouth and weaves a tent for her young.

The wolf spiders have long, strong legs, all covered, like their bodies, with thick fur. They are difficult to identify, as their colors are mostly monotonous gray or brown, and their markings often faint and uncertain and only in the colors of the hairs. Sometimes the underside, the breast-plate and some marks on the belly will be of much aid in identification.



Tent of Dolomedes.

Chest part longer than wide.

spinnerets short.

front row eyes small in a straight line, which is longer than the second row.



Eyes of second row the largest, their own width apart - -

Lycosa.

front row eyes shorter than second; second row further apart - -

Pardosa.



spinnerets long.

second row eyes large and close together; third row further apart - -

Pirata.



second and third rows of eyes about equal, large and separate,
forming a square - - - - - - -

Aulonia.



Chest part but a little longer than broad.

eyes of nearly one size; third row far apart - - - - -

Ocyle.



Chest part as long as wide; head broad and low.

eyes of third row large and far apart - - - - -

Dolomedes.



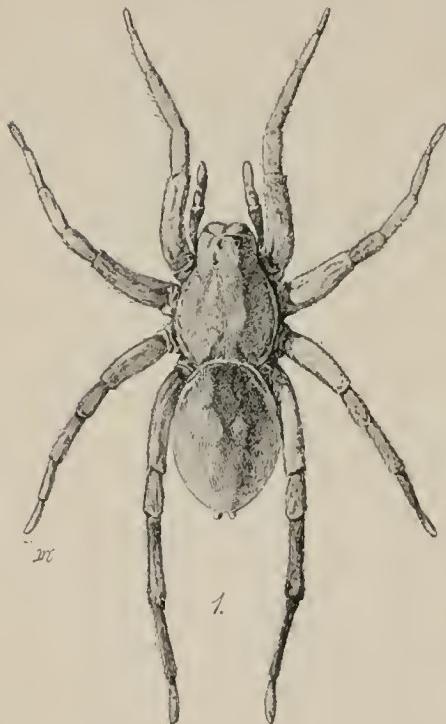
Eyes in four rows - - - - -

Oxyopes.

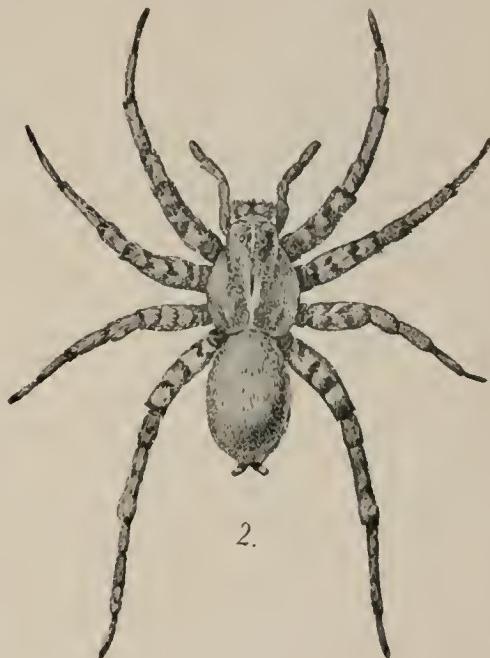
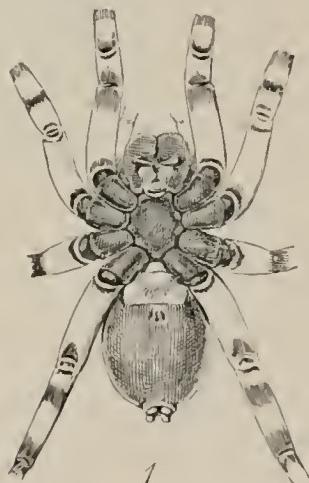


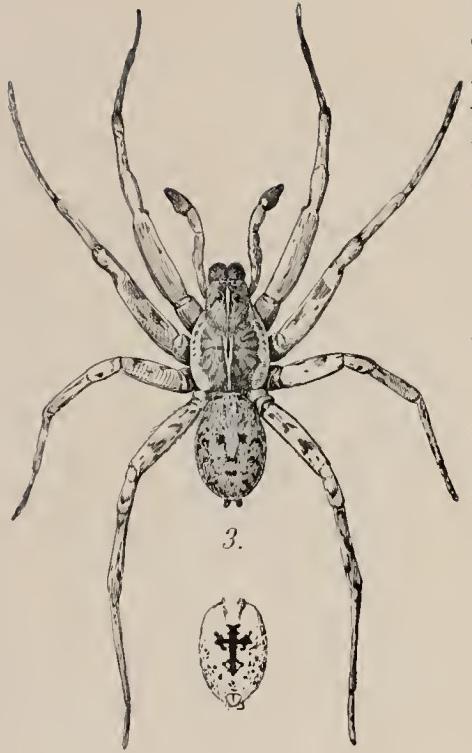
LYCOSA.—*Wolf Spider.*

1. *L. carolinensis*. $1\frac{1}{2}$ in. long. Above nearly uniform gray brown mouse color; males lighter than females. Under side black. Legs white, with black rings at joints.



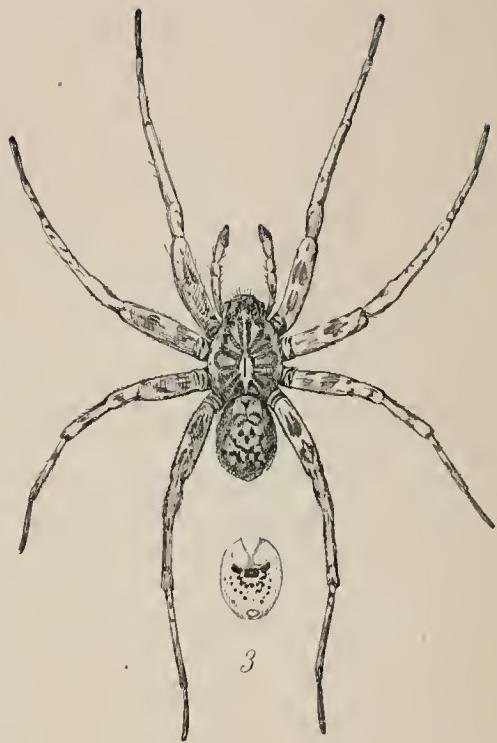
2. *L. fatifera*. 1 in. long.
Bluish black, with a small
red wart each side of head.
Underneath paler. Legs with
black rings above and below.

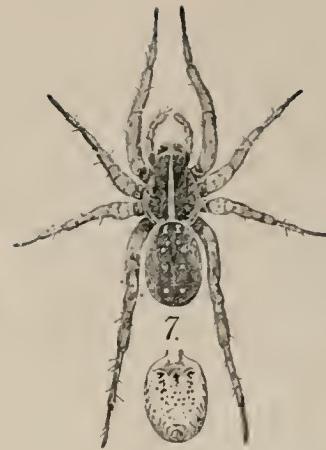
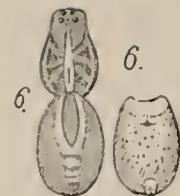
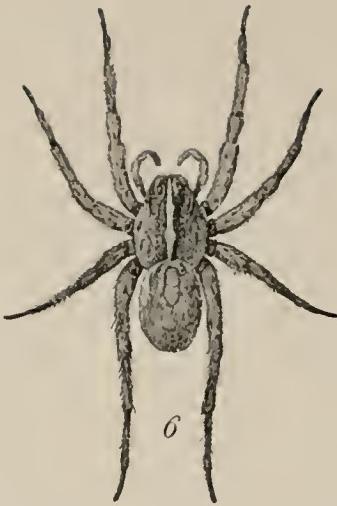
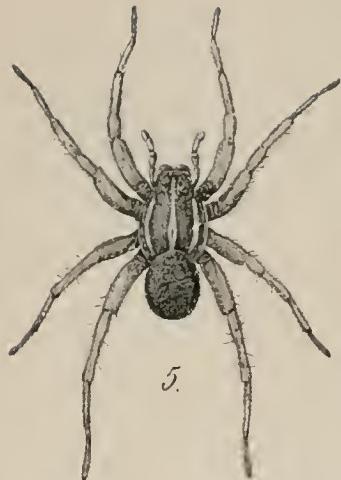




3. *L. vulpina*. 1 in. long.
Grayish buff, with dark gray
and black marks. Chest part
with a narrow white line in
the middle and a broad, pale
stripe at each side. Belly un-
derneath pale-buff with black
patches and dots. Breast
dark brown.

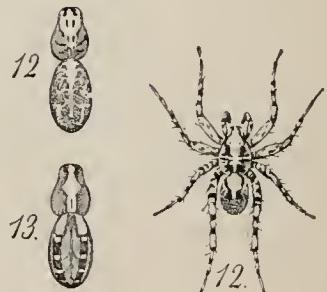
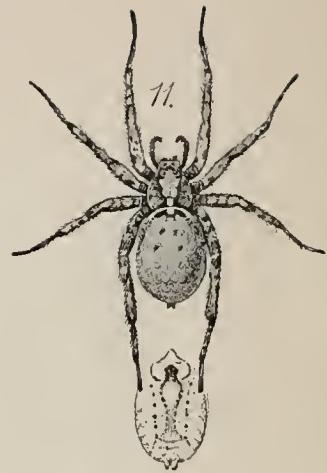
4. *L. nidifex*. $\frac{7}{8}$ in. long.
Chest part dark gray with
a light stripe, and three or
four pairs of white spots.
Legs becoming lighter from
first pair to the fourth.

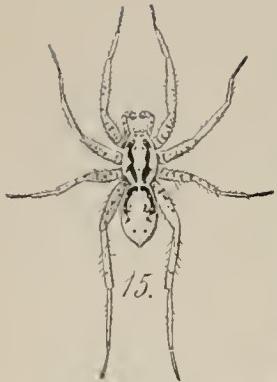




5. *L. lenta*. $\frac{7}{8}$ in. long. Dark blackish brown. Chest part with three waxy, honey-colored stripes. Legs waxy, honey-colored, with black hair, and no rings. Underneath chest and legs honey-colored; belly black.
6. *L. nidicola*. $\frac{3}{4}$ in. long. Yellowish brown; a light middle line on chest part. Belly light grayish brown, with small black specks. Legs without rings.
7. *L. riparia*. $\frac{5}{8}$ in. long. Dull brown, with a yellowish brown stripe on chest part, and a few dots on body part. Underneath, chest black; body part light brown with round black dots, some of them confluent in irregular marks. Legs yellowish brown with faint bands, dark at both ends.

8. *L. punctulata*. $\frac{5}{8}$ in. long. Chest part dark brown, with three whitish stripes. Body part brown, with a dark, light-edged stripe. Underneath light with irregular dark patches. Legs without rings.
9. *L. scutulata*. $\frac{5}{8}$ in. long. Like *L. punctulata*, but the dark stripe on body broken and spotted. Under side light, without marks.
10. *L. frondicola*. $\frac{5}{8}$ inch long. Chest part dark brown, with a gray stripe, dark gray underneath. Body part dark brown with wide gray stripe containing darker half-stripe; lighter underneath, with broad dark stripe. Legs gray.
11. *L. kochii*. $\frac{5}{8}$ inch long. Chest part dark brown, light grayish in the middle. Body part grayish dark brown at sides with two rows of white dots. Legs ringed, darker towards the feet.
12. *L. polita*. $\frac{1}{2}$ inch long. Chest part reddish brown; the head and a stripe lighter; dark underneath. Body part light yellowish with gray or black marks; under side light with a dark line wider at both ends. Legs short, reddish brown with dark spines.
13. *L. pictilis*. $\frac{1}{2}$ inch long. Brown. Chest part with a light stripe. Body part with two black stripes with spots; the first spots larger and orange colored, the others white. Legs with dark rings.



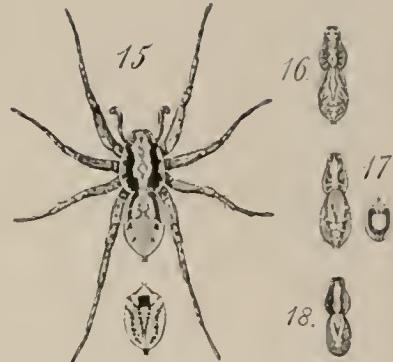


14. *L. cinerea*. $\frac{1}{2}$ in. long. Chest part yellowish-white with faint marks; black between the eyes. Body part hairy with irregular black marks. Legs with faint rings.
15. *L. ruricola* or *nigroventris*. $\frac{1}{2}$ in. long. Light gray or buff with dark brown or black marks which are larger or smaller in different specimens, sometimes only spots. Underneath a large black mark or its outline. Legs light gray-buff with black spines.
16. *L. pratensis*. $\frac{3}{8}$ in. long. Yellowish brown and gray with a light stripe and spots.

It resembles *L. polita*. The first and second rows of eyes are about the same length. In *polita* the first row is longer than the second.

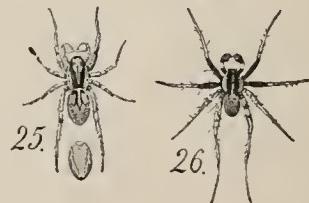
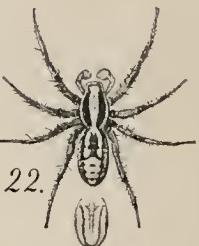
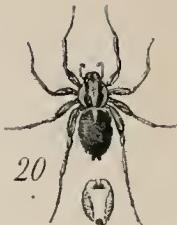
L. communis. $\frac{3}{8}$ inch long. Chest part dark brown with light gray stripes. Body part dark brown with a yellow stripe. Underneath a light spot surrounded by a broad, black line.

L. ocreata. $\frac{5}{16}$ in. long. Dark brown with a gray stripe. Legs yellowish with gray rings; middle of first legs very hairy.



PARDOSA.

- 19. *P. albomaculata*. $\frac{1}{2}$ in. long. Black with white spots. Legs with light rings.
- 20. *P. brunnea*. $\frac{3}{8}$ in. long. Dark brown with light marks. A light line on the belly.
- 21. *P. lapidicina*. $\frac{3}{8}$ in long. Black and gray. Legs with light rings.
- 22. *P. bilineata*. $\frac{5}{16}$ in. long. Light yellow with brown. Chest part underneath light with a dark edge and a row of spots at each side. Under side of body marked with four indistinct lines. Legs light yellow.
- 23. *P. palida*. $\frac{1}{4}$ in. long. Light yellowish with brown. Similar to *P. bilineata*, but on the belly are two black lines.
- 24. *P. nigropalpis*. $\frac{1}{4}$ in. long. Black and gray. Legs yellowish, with gray rings.
- 22. *P. montana*. $\frac{1}{4}$ in. long. Resembles *P. albopatella* but its colors are duller and markings less distinct. All legs are alike.
- 23. 26. *P. albopatella*. $\frac{1}{8}$ in. long. Black and whitish gray. Under side of chest part black; belly gray with three black lines. The feelers are black with a white middle joint. The first legs are black, the others lighter towards the feet and the last pair are ringed.
- 24.



25



26

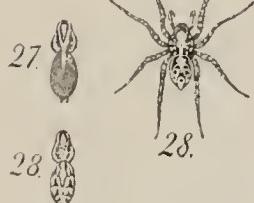
PIRATA.



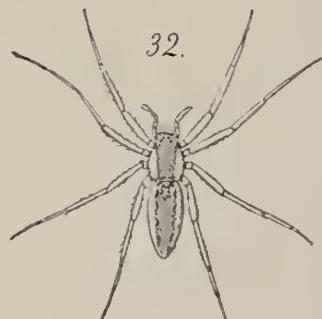
- 27. *P. insularis*. $\frac{5}{16}$ in. long. Dirty white and dark gray. Under side of chest part dark with two light lines, and belly dark with many light spots. Legs faintly ringed.
- 28. *P. piraticus*. $\frac{5}{16}$ in. long. Yellow with black or gray markings.
- 29. *P. montanus*. in. long. Gray and white. Under side of chest part white. Legs yellowish white with faint gray rings.
- 30. *P. minutus*. $\frac{1}{8}$ in. long. Gray and white. Legs white.



AULONIA.

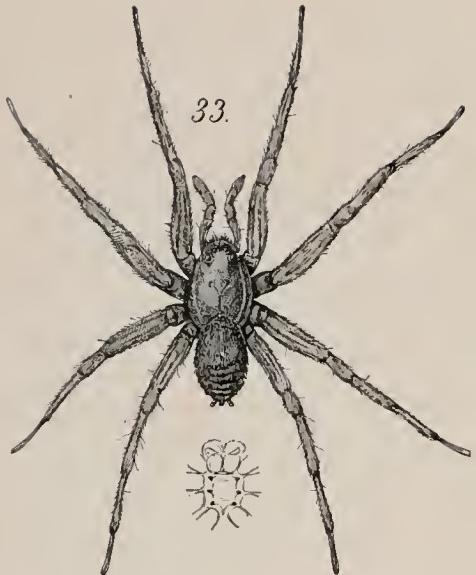


- 31. *A. aurantiaca*. $\frac{1}{8}$ in. long. Black with orange spots and yellow lines and markings.



- 32. *O. undata*. $\frac{1}{2}$ in. long. Yellowish brown with a brown white-edged stripe. Legs reddish brown. The young have only a brown, wavy outline of the stripe.

DOLOMEDES.



33. *D. tenebrosus*. $\frac{3}{4}$ in. long. Dark brown and light gray. Chest part with a light stripe at each side. Body part with four or five dark cross-bars on the hind half; on the male they are more united into a stripe, edged with a white or yellow line. Legs with dark rings. Both *dolomedes* live near water, on which they walk with the greatest ease. The female carries her egg-sack in her mouth till the young are ready to hatch, then she builds a bird cage-like nest in the top of some bushes for them and watches it from the outside.



34. *D. sexpunctatus*. $\frac{1}{2}$ in. long. Chest part dark yellowish brown with very bright white lines. The body is dark gray with two rows of small white spots. Legs greenish yellow with dark spines, but not ringed. On the under side of the chest part are six small dots.

OXYOPES.

35. *O. scalaris*. $\frac{1}{4}$ in. long. Dark brown, gray and yellow, on the under side a black between two yellow stripes. *Oxyopes* has its eyes in four rows, and therein differs from all other *Lycosidæ*.



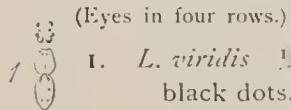
JUMPING SPIDERS.—*ATTIDIÆ.*

The jumping spiders make no webs to catch their prey, but spin nests in some crack or bark of a tree to use over winter, or for changing their skins. They also, when jumping, throw out a thread to avoid falling. They can walk easily sideways or backwards and can jump quite a distance. Their eyes are in three or four rows,—those in the middle of the lowest row being the largest; those of the row before the last sometimes almost invisibly small, and the last row placed far backward, nearly half the chest part.

Besides their eyes, their long square bodies and short legs and impudence make these spiders easily recognizable. The length of their legs vary; in some kinds the first pair, in others the fourth, the second and even the third are the longest. In some kinds the first pair of legs are much stouter than the others. Some kinds resemble ants closely in shape and actions; they even walking on six legs by stretching out one pair like feelers.

In *Salticus* the last row of eyes is as far from the row before the last, as the eyes in this row are from each other. In *Attus* they are not half that distance apart.

LYSSOMANES.



(Eyes in four rows.)

1. *L. viridis* $\frac{1}{4}$ in. long. Green. Chest part with a black line, and body part with six or eight black dots.

ATTUS OR SALTICUS.

2



- Eyes in three rows. First pair of legs much stouter than the others.
First pair the longest.

2. *A. audax.* $\frac{1}{2}$ in. long. Black. Body part with white spots and lines.

3



3. *A. militaris.* $\frac{3}{8}$ in. long. Reddish brown. Chest part with one white spot.
Body part with two black stripes with white spots.

4. *A. sexpunctatus.* $\frac{5}{8}$ in. long. Black with six white dots on the body.

4



Fourth pair of legs the longest.

5



5. *A. nuttalii.* $\frac{1}{2}$ in. long. Chest part pitch-like. Body part pale gray with
a black stripe containing a white spot.

6



6. *A. castaneus.* $\frac{3}{8}$ in. long. Chest part black. Body part dark brown, with
indistinct dots and lines. Legs reddish with bands.
7. *A. teeniola.* $\frac{3}{8}$ in. long. Black with two white stripes on chest part, and two
spotted lines on body part.
8. *A. elegans.* $\frac{1}{4}$ in. long. Chest part reddish. Body part metallic
green. Thighs of first legs black.



Eyes in three rows. Legs equally thick.

Fourth pair of legs the longest; the first pair next in length.



6

9. *A. mystaccus.* $\frac{1}{2}$ in. long. Gray with white spots.

10. *A. familiaris.* $\frac{3}{8}$ in. long. Chest part gray. Body part blackish,
with a white-edged gray stripe.



9



11. *A. tripunctatus*. $\frac{3}{8}$ in. long. Black with three white marks on hind part of body.



12.

12. *A. fasciolatus*. $\frac{5}{16}$ in. long. Black. Chest part with three gray spots. Body part with three white spots and lines. Legs reddish.



18.



13. *A. rufus*. $\frac{1}{4}$ in. long. Reddish with a white stripe on fore part of the body, and four white dots.



14. *A. hebes*. $\frac{1}{4}$ in. long. Chest part brown. Body part white with a green spot and four black dots and a stripe.



19.

15. *A. parvus*. $\frac{3}{16}$ in. long. Gray. Body part with six or eight short white lines. Legs reddish and black.



16. *A. niger*. $\frac{3}{8}$ in long. Black with yellowish legs; no marks.



18.

Fourth pair of legs the longest; the third pair next longest.



17. *A. vittatus*. $\frac{1}{4}$ in. long. Black with two white stripes on chest part and three on body part. Legs reddish with black rings.



19.



18. *A. leopardus*. $\frac{1}{4}$ in. long. Chest part reddish and black shaded. Body part gray with reddish bands. Legs pale reddish.

Third pair of legs the longest; the fourth pair next longest.



19. *A. pulax*. $\frac{1}{8}$ in. long. Pitch-black; gray hairy on head and a few white spots on its body.



20.

20. *A. roseus*. $\frac{3}{16}$ in. long. Chest part white. Body pink. Legs yellow.

First pair of legs the longest; the fourth pair next longest; legs slender.

21.  *A. canonicus*. $\frac{3}{8}$ in. long. Orange. Body with two rows of black dots. Legs with black rings.

EPIBLEMUM.

22.  *E. faustum*. $\frac{1}{4}$ in. long. Pitch-black with white spots and short lines. The male with long poison claws.

23.  Ant-like Spiders.

SALTICUS.

24.  *S. ephippiatus*. $\frac{1}{8}$ in. long. Chest part yellowish brown. Body part brown in front and black behind and a white band in the middle.



SYNEMOSYNA.

25.  *S. formica*. $\frac{1}{4}$ in. long. Chest part white and brown. Body part reddish and black, with a yellow spot at each side.

SYNAGELES.

25. *S. scorpionia*. Less than $\frac{1}{8}$ in. long. Brown and white.
26. *S. picata*. $\frac{1}{8}$ in. long. Black. Legs with reddish rings.
27. *S. americana*. $\frac{1}{8}$ in. long. Light brown with a reddish tint; white around the eyes. Body part light in front and dark behind with a light band.

CRAB SPIDERS.—*THOMISIDÆ.*

These spiders spin no web, but cast a few, stray threads. They live under leaves, in flowers or on fences waiting for their victims. The white, round, flat spider nests on the under side of leaves are their cocoons, which the mother watches till the young are hatched. The two first pairs of legs are longer than the rest; the second being generally the longest, while the two last pairs are very small. Their movements are crab-like, backwards and sideways.

The *Thomisidæ* differ considerably in the position and size of their eyes and have been therefore divided into many genera. In *Xysticus*, *Synema*, *Tmarus* and *Thomisus* the outside eyes or lower row are larger, protruding or elevated; in the others the eyes are nearly equal in size, or the two in lower middle row are smaller.

EYES OF *THOMISIDÆ.*

 *Thomisus.*

 *Xysticus.*

 *Synema.*

 *Tmarus.*

 *Misumena.*

 *Tibellus.*

 *Philodromus.*

 *Thanatus.*

 *Sparassus.*

 *Ocypete.*

TOMISUS or XYSTICUS.



1. *T. piger*. $\frac{3}{8}$ in. long. Yellowish brown. Chest part with two brown stripes. Body part with two rows of dots. Paler underneath.
2. *T. asperatus*. $\frac{1}{4}$ in. long. Pale brown, covered with bristles. Chest part with two black stripes. First and second pairs of legs with brown rings.
3. *X. stomachosus*. $\frac{1}{4}$ in. long. Chest part light yellow, reddish brown at the edges. Body part dirty white, with black dots. Legs yellow.
4. *X. triguattatus*. $\frac{3}{16}$ in. long. Chest part reddish brown, with black marks. Body part dark brown, with white markings. Legs yellow.
5. *X. emertoni*. $\frac{3}{8}$ in. long. Chest part yellowish brown, with white edges and red brown markings. Body part brown above, underneath yellow with red brown dots. Legs red brown.
6. *X. gulosus*. $\frac{1}{4}$ in. long. Chest part yellowish gray with brown and black spots. Body part brown gray, whitish at the sides. Legs brown above, under side gray or yellow with black dots.



CORIARACHNE.

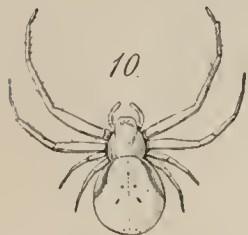
7. *C. versicolor*. $\frac{1}{4}$ in. long. Chest part yellow, marbled with red brown and red streaks. Body part dark brown, and whitish. Legs yellow, with red brown feet.

SYNEMA.

8. *S. parvula*. $\frac{1}{8}$ in. long. Chest part reddish. Body part yellowish with a black band. Hind legs greenish or yellowish.

9. *S. obscura*. $\frac{1}{4}$ in. long. Chest part dark red with yellowish edges. Body part black brown with a narrow white band. Legs yellowish brown, upper shanks black.

MISUMENA.



10. *M. vatia*. $\frac{1}{2}$ in. long. Yellowish white; pink around the eyes and a red stripe at each side of the body; a few impressed dots on the back.
11. *M. rosea*. $\frac{1}{4}$ in. long. Chest part yellow with red edge and spots. Body part yellow with red dots. Legs light yellow with red dots. The male is only $\frac{1}{8}$ in. long.
12. *M. americana*. $\frac{1}{4}$ in long. Chest part red brown. Body part white. Legs yellow.
13. *M. georgiana*. $\frac{1}{4}$ in. long. Chest part light yellow. Body part white. Legs light yellow.



RUNCINIA.

14. *R. brendelii*. Female $\frac{3}{8}$ in. long. Male $\frac{1}{8}$ in. long. Light yellow with brown spots and marks.

TMARUS.

15. *T. caudatus*. $\frac{1}{4}$ in. long. Blackish. The body part with a small tail and six black dots.
16. *T. duttoni*. Female $\frac{1}{2}$ in. long. Male $\frac{3}{8}$ in. long. Pale gray or yellow with red brown dots and a stripe from head to tail. Body long and narrow.



PHILODROMUS.



17.

17. *Ph. vulgaris*. $\frac{1}{4}$ in. long. Chest part brownish yellow with white edges. Body part red brown with white and brown hair. Legs yellow with dark rings; feet white.



17.

18. *Ph. expositus*. $\frac{1}{4}$ in. long. Chest part brown with black edge. Body part blackish brown with red stripes. Legs yellow with red brown spots.

19.

19. *Ph. infuscatus*. $\frac{1}{4}$ in. long. Blue gray with white dots.

20.

20. *Ph. imbecillus*. $\frac{1}{8}$ in. long. Dirty white with red brown stripes.



17.



21.

21. *Th. ferox*. $\frac{1}{4}$ in. long. Pear-shaped. Brownish yellow. Chest part with two dark stripes. Body part with four or six dark brown spots. First pair of legs hairy.

22.

21.

22. *Th. celer*. $\frac{5}{16}$ in. long. Pale yellow with a greenish tint about the legs, and two rows of dots on the body part.

23.

23. *Th. aleatorius*. $\frac{1}{8}$ in. long. Greenish yellow; reddish around the eyes and a few white stripes. Body part yellow with six impressed black dots. The two front pairs of legs waxy brown, the two hind pairs white.



21.



23.

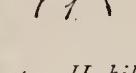
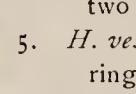
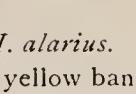
SILK SPIDERS, TUBE OR BAG WEAVERS.—*DRASSIDÆ.*

This family resembles short-legged *Lycosidæ* in shape. Some seem homeless, wandering about at night time, others spin tubes or bags under stones, logs or curled-up leaves, which they seldom leave in day time. Their wintering bag is made of several coats of the finest, whitest silk, and is beautifully soft and warm. American *Drassidæ* have never been well studied. About fifty kinds have been described in European and American publications, some perhaps twice under different names. Hentz describes most kinds under the names of *Herpyllus* and *Clubiona*. Other writers divide the family into *Drassidæ* and *Clubionidae*, of which the first contains the dark colored kinds which live on the ground, and the latter the mostly light colored kinds which live on shrubs and plants. They are so nearly related that it seems better to keep them in one family and to divide the same into sub-families.

Upper row of eyes straight or curved upward, lower row curved downward,	-	<i>Pythonissa.</i>
Both rows of eyes curved downward.		
eyes nearly equal in size; middle eyes nearer to each other than to the outside eyes.—(See <i>Ciniflonidæ</i> .)	- - -	<i>Amaurobius.</i>	::::::
middle eyes nearer the outside eyes than to each other	- - -	<i>Macaria.</i>	:::::
outside eyes of lower row larger than the middle eyes	- - -	<i>Melanophora.</i>	:::::
middle eyes larger than outside eyes of the lower row	- - -	<i>Drassus.</i>	::::
upper middle eyes very small	- - -	<i>Lucia.</i>	::::
Upper row bent downward, lower row straight	- - -	<i>Clubiona.</i>	::::
Upper row curved downward and lower row bent upward	- - -	<i>Anypheona.</i>	::::

HERPYLLUS.

Swiftly running spiders which make no webs.

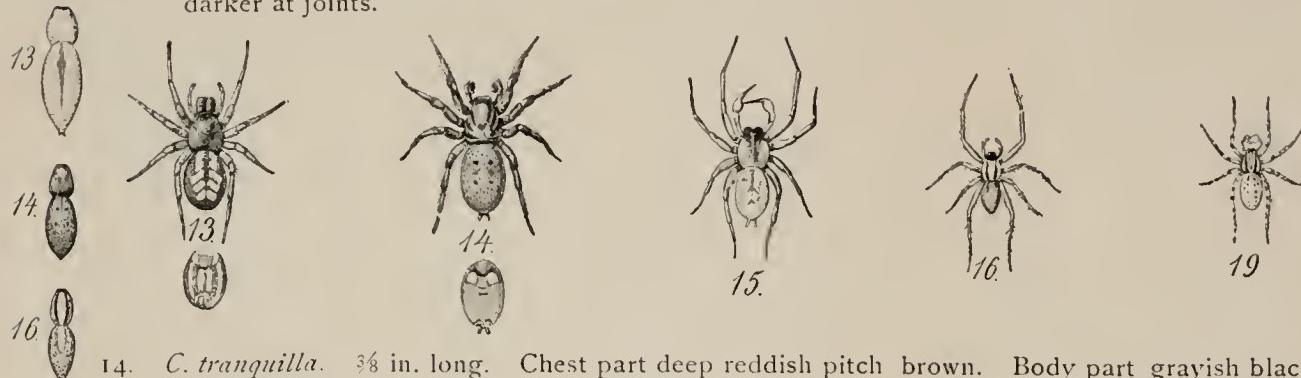
- | | |
|--|---|
| 
1. | 1. <i>H. ecclesiasticus</i> . $\frac{1}{2}$ in. long. Black. Chest part with a broad white stripe. Body part with half a white stripe and a white spot. |
| 
2. | 2. <i>H. bicolor</i> . $\frac{7}{16}$ in. long. Chest part reddish. Body part bluish black with six impressed dots. |
| 
2. | 3. <i>H. descriptus</i> . $\frac{7}{16}$ in. long. Black with a copper colored half stripe on latter half of body. |
| 
4. | 4. <i>H. bilineatus</i> . $\frac{3}{8}$ in. long. White with two black stripes from head to tail, and also two black stripes on belly. |
| 
3. | 5. <i>H. vespa</i> . $\frac{3}{8}$ in. long. Chest part pitchy brown. Body part black with a white ring on forward end. |
| 
6. | 6. <i>H. ornatus</i> . $\frac{5}{16}$ in. long. Copper colored with broken black bands on body. Thighs of two pairs of forward legs black; other legs yellow with black rings. |
| 
7. | 7. <i>H. crocatus</i> . $\frac{1}{4}$ in. long. Chest part pitch brown. Body part black with a yellow stripe. Last pair of legs hairy. |
| 
8. | 8. <i>H. variegatus</i> . $\frac{1}{4}$ in. long. Chest part reddish. Body part black with white bands. Legs reddish with black rings. |
| 
9. | 9. <i>H. ater</i> . $\frac{1}{4}$ in. long. Black; glossy. |
| 
10. | 10. <i>H. cruciger</i> . $\frac{1}{4}$ in. long. Gray with black spots. |
| 
11. | 11. <i>H. zonarius</i> . $\frac{1}{8}$ in. long. Brown with two short white bands on each side of body. Legs brown and yellow. |
| 
12. | 12. <i>H. alarius</i> . $\frac{1}{8}$ in. long. Chest part pale reddish, darker at the edges. Body part brown with yellow bands. Legs pale, the forward pair and a ring on the second pair black. |



CLUBIONA.

Live in tubes or bags under stones, logs or leaves.

13. *C. (Amaurobius) obesa*. $\frac{1}{2}$ in. long. Yellowish brown, a darker stripe on its back. Legs darker at joints.



14. *C. tranquilla*. $\frac{3}{8}$ in. long. Chest part deep reddish pitch brown. Body part grayish black with four impressed dots.

15. *C. piscatoria*. $\frac{3}{8}$ in. long. Head dark brown. Chest part and legs yellowish brown, waxy. Body part pale buff, silky downy, feebly marked.

16. *C. gracilis*. $\frac{3}{8}$ in. long. Yellowish. Chest part with two bluish stripes. Face black brown. Body part with two bands of small red dots.

17. *C. inclusa*. $\frac{5}{16}$ in. long. Pale yellow. Body part with a faint dark stripe. Legs dark at joints.

18. *C. pallens*. $\frac{5}{16}$ in. long. Dirty white. Body part with gray spots. Underneath four dots near the spinnerets.



19. *C. fallens*. $\frac{1}{4}$ in. long. Yellowish or reddish. Chest part with two black stripes.
Body part with two dotted stripes enclosing two rows of smaller dots.



20. *C. saltabunda*. $\frac{1}{8}$ in. long. Pale brown with a few dark spots on edges.
Body with two rows of black dots; dotted underneath.



THE FUNNEL WEAVERS.—*AGELENIDÆ*.

They spin nets to catch insects, and stay in or near the nets in a convenient place watching for their prey to become entangled. Their webs, closely woven, supported by strong cross-threads running in all directions, are placed horizontally, ending at one side in a tube in which the spider dwells.

In shape these spiders resemble *Lycosidæ*, but are easily distinguished from all others by their long, tail-like spinnerets. *Tegenaria*, the cellar spider, builds his web mostly in dark places, and the tube is generally placed above the web. *Agelena*, the grass spider, places his web on stumps, shrubs, plants, and in the grass, with its tube below the web ending on the ground, and affording an easy way to escape when a formidable enemy becomes entangled in the web.

EYES OF *AGELENIDÆ*.

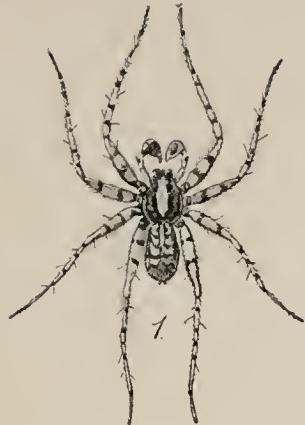


Tegenaria,

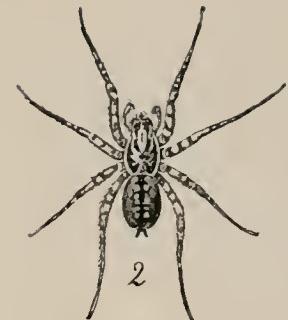


Agelena.

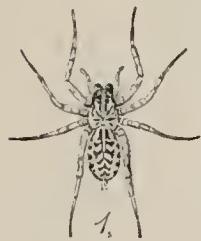
TEGENARIA.



1. *T. medicinalis*. $\frac{1}{2}$ in. long. Pale brown or mouse grey. Chest part with two black stripes. Body part with three stripes of square spots. Legs with many black bands.

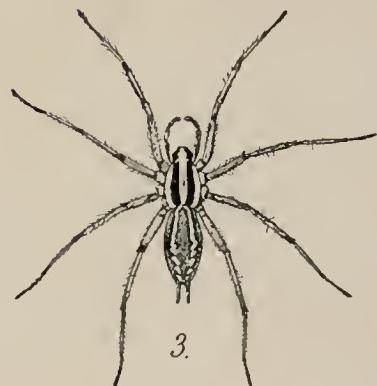


2. *T. persica*. $\frac{1}{2}$ in long. Pale grey. Chest part with two broken black stripes. Body part black in the middle with a row of four pale spots on each side. Legs with many black bands.



AGALENA.

3. *A. naevia*. $\frac{3}{4}$ in. long. Pale reddish or yellowish, with two black stripes on chest part. Body part blackish brown with two white spot stripes. One of the most common spiders in the United States.



THE COBWEB SPIDERS.—*THERIDIIDÆ.*

Mostly small spiders which have their eyes in a close bunch on their foreheads, somewhat distant from their mouth. Their legs are long and slender; the first and second, or the first and fourth pairs being the longest. Their nets consist mostly of a horizontal bag under which they watch, hanging by their legs, back downwards. This bag is connected with all near objects by threads running irregularly in all directions. The net often occupies a considerable space in which they suspend their egg-sacks. Some kinds live in the net by pairs.

The family is very large and has been divided into many genera. It contains our smallest spiders.



Theridium. Breast part as broad as long. Body part round, globular. Legs long and slender, covered with short hair.



Mimetus. Breast part narrower than long. Body part widest in front, pointed behind. Legs long, beset with spines.



Ero. Breast part highest in the middle. Body part egg-shaped. Legs beset with spines.



Steatoda. Breast part broader than long. Body part oval, smooth and shiny. Legs shorter and stouter than *Theridium*.

Asagena. Like *Steatoda*, but body hairy and flattened.



Agyrodes. Body part triangular or odd-shaped.



Spintharus. Breast part circular. Body part long and pointed. The first and fourth pairs of legs twice as long as the second.



Euryopis. Breast part short and broad. Body part broad, flat and pointed.



Erigone. Breast part long. Body part long, oval. Legs short, about as long as body.



Linyphia. Breast part long. Body part egg-shaped or oval, thick. Legs long and beset with spines.

Stemonyphantes, Helophora, Bathyphantes and *Microneta* like *Linyphia*. *Microneta* with shorter legs.



THERIDIUM.

- I. *Th. tepidariorum.* $\frac{1}{4}$ in. long. Breast part yellow brown. Body part black or dirty white with black spots. Legs light yellow with brown rings at the middle end of joints.



2.  *Th. zelotypum*. $\frac{3}{16}$ in. long. Breast part orange striped in middle and edges. Body part black with a white stripe which is reddish in the middle. Legs orange, brown ringed.
3.  *Th. murarium*. $\frac{3}{16}$ in. long. Breast part gray, striped in the middle and on the edges. Body part gray with a white stripe which is reddish in the middle. Legs gray, dark ringed.
4.  *Th. frondeum*. $\frac{3}{16}$ in. long. Breast part light yellow, striped in the middle and on edges. Body part light yellow, lighter on the back, with or without black marks. Legs light yellow.
5.  *Th. difference*. $\frac{1}{8}$ in. long. Breast part orange brown, not striped. Body part red brown, with a white stripe which is reddish in the middle. Legs orange brown darker at the joints.
6.  *Th. spirale*. $\frac{1}{8}$ in. long. Breast part brownish orange, indistinctly striped. Body part yellowish gray, lighter in the middle. Legs yellow, darker at the joints.
7.  7. *Th. montanum*. $\frac{1}{8}$ in. long. Breast part orange, dark at the edges. Body part yellow gray, lighter in the middle. Legs yellow, darker towards the feet.
8.  8. *Th. puncto-sparsum*. $\frac{1}{8}$ in. long. Breast part dark yellow, brown striped in the middle and on the edges. Body part dark gray with white spots. Legs yellow with dark rings.

Less than $\frac{1}{8}$ of an inch long.

Th. rupicola. Resembles *Tepidariorum* in color.

Th. globosum. Dark gray with a white spot on the back.

Th. unimaculatum. White with black spot on the back.

Th. sexpunctatum. Yellow with six black patches on the back.

Theridula sphœrula. Gray with a yellow spot on back and short legs.

MIMETUS.

9. *M. interactor*. $\frac{1}{4}$ in. long. Breast part whitish. Head brown. Body part gray brown. Legs light yellow with dark brown rings and spines.
10. *M. epeiroides*. $\frac{1}{8}$ in. long. Breast part light yellow with four lines on the head. Body part light yellow with lighter bands. Legs light yellow not ringed.



ERO.

11. *E. thoracica*. $\frac{3}{8}$ in. long. Breast part light yellow with two dark stripes. Body part white with brown spots and stripes covered with stiff brown hair. Legs yellow, brown ringed.



STEATODA.

12. *S. marmorata*. $\frac{1}{4}$ in. long. Breast part yellow brown. Body part whitish with black lines and spots. Legs yellow brown, variable.
13. *S. borealis*. $\frac{1}{4}$ in. long. Breast part orange brown. Body part dark brown with three white short lines on fore part. Legs brown, faintly ringed.
14. *S. triangulosa*. $\frac{3}{16}$ in. long. Breast part orange brown. Body part yellowish gray with light and dark spots and stripes. Legs slender, light yellow with faint rings.



Less than $\frac{1}{8}$ of an inch long.

S. guttata. Yellow brown or black with white spots.

S. nigra. Black.

ASAGENA.

15. *A. americana*. $\frac{3}{16}$ in. long. Breast part dark red brown. Body part dark brown with two white spots. Legs yellow brown with spines.

ARGYRORODES.

16. *A. fictilium*. $\frac{1}{4}$ in. long. Breast part light yellow with three stripes. Body part silvery with a dark stripe. Legs light yellow.
17. *A. trigonum*. $\frac{1}{8}$ in. long. Breast part light yellow with three brown stripes. Body part light yellow, sides reddish. Legs light yellow.

Less than $\frac{1}{8}$ of an inch long.

Lasaeola cancellata. Black with white marks abruptly narrowed at the end.

Ulesanis americana. Light brown like a clump of earth.

Pholcomma. Dark brown, hairy.

SPINTHARUS.

18. *S. flavidus*. $\frac{3}{16}$ in. long. Breast part light yellow. Body part gray above and yellow below with red and white stripes. Legs light yellow, shanks of first and fourth pairs orange.

EURYOPIS.

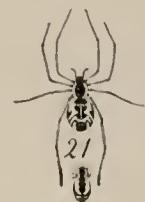
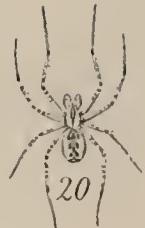
19. *E. funebris*. $\frac{1}{8}$ in. long. Breast part yellowish gray, black around the eyes. Body part dark gray or black, bright silvery on the hind part. Legs yellow with black rings.

ERIGONE.

This genus contains numerous small spiders hardly $\frac{1}{16}$ inch long, and therefore difficult to recognize, except some *Ceratinella* and *Ceratinopsis*, which are bright orange red colored.

LINYPHIA.

20. *L. phrygiana*. $\frac{1}{4}$ in. long. Breast part light yellow, with a forked black line and edges. Body part whitish with a brown spot-stripe. Legs light yellow with black rings.
21. *L. marmorata*. $\frac{1}{4}$ in. long. Yellowish white with black marks. Legs greenish. Belly black with two rows of yellow spots, three in a row.
22. *L. marginata*. $\frac{3}{16}$ in. long. Breast part yellow with white edges. Body part white with a black spot-stripe. Legs light yellow with black spines.
23. *L. communis*. $\frac{3}{16}$ in. long. Breast part yellow brown. Body part dark brown with a white band at each side. Legs dull yellow.
24. *L. mandibulata*. $\frac{3}{16}$ in. long. Breast part yellowish brown. Body part dark brown with yellowish white spots.
25. *L. clathrata* $\frac{1}{8}$ in. long. Breast part yellow brown with a dark stripe. Body part light yellow with brown markings. Legs orange.



STEMONYPHANTES.

26. *S. bucculentus*. $\frac{1}{4}$ in. long. Breast part yellowish gray with three black stripes. Body part yellow gray with three rows of black dots. Legs yellow gray with black spots.

HELOPHORA.

27. *H. insignis*. $\frac{1}{8}$ in. long. Breast part light yellow. Body part gray or white with no markings.



BATHYPHANTES.

28. *B. nebulosa*. $\frac{3}{16}$ in. long. Breast part brownish yellow with a forked stripe and edges.
Body part dark spotted and striped. Legs brown yellow, ringed with black.
29. *B. minuta*. $\frac{1}{8}$ in. long. Breast part yellowish brown with darker edges. Body part gray with white marks. Legs yellow brown, ringed.

Less than $\frac{1}{8}$ of an inch long.

B. zebra. Gray with white bands.

B. alpina. White and black striped.

B. formica. White. Legs long, shiny black and feet white.

B. complicata. Gray. Breast part and legs orange.

MICRONETA.

30. *M. discolor*. $\frac{1}{8}$ in. long. Breast part orange brown. Body part brown gray, white below. Legs orange.
31. *M. quinquedentata*. $\frac{1}{8}$ in. long. Breast part yellow brown, edges dark. Body part dark gray.
32. *M. crassimanus*. $\frac{1}{8}$ in. long. Breast part orange brown. Body part gray.

These six-eyed genera are related to *Therididae*.



SCYTODES.

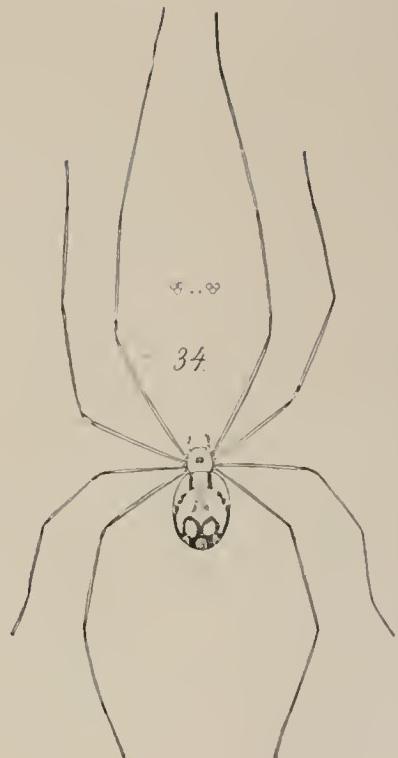
33. *S. thoracica*. $\frac{1}{4}$ in. long. Breast part light yellow with irregular black marks. Body part white with several rows of black spots. Legs light yellow with black rings. Only six eyes.

PHOLCUS.

34. *P. phalangioides*. $\frac{3}{8}$ in. long. Pale whitish. Legs $1\frac{1}{2}$ inches long.
Side eyes bunched in threes; the middle ones almost invisibly small.
35. *Spermaphora meridionalis*. $\frac{1}{16}$ in. long. Resembles a miniature *Pholcus*, but has only six eyes.

THE WHEEL OR ORB-WEB SPIDERS.—*EPEIRIDÆ*.

The most observed and best known of the spiders. Their eyes are widely spread over their foreheads; the two outside pairs of eyes are far from the two centre pairs. The legs are generally short and stout, the first and second pairs usually the longest. Their circular nets are placed perpendicularly, the threads spreading from the centre like the spokes of a wheel, and covered by an adhesive, sticky thread winding spiral-like from near the centre to the outer edge. The spider watches the net from the centre or in a tent, curled leaf, or crevice connected by threads with the web.





Epeira. Breast part short and low. Body part round or slight oval.



Cyrtarachne has a very short body, broader than long, and spines on breast part.



Cyclosa has a bump on back.



Singa. Breast part longer and body oval.



Meta and *Zilla* are similar, but differ in construction of web.



Acrosoma. Breast part small. Body large and flat and several spines on the edges.



Argiope has a long oval body pointed at the end.



Argyropeira has a long, oval body rounded at the end, and very long legs.

EPEIRA.

The following six have two bumps or corners on the fore part of their bodies. The first four resemble each other.



1. *E. angulata*. $\frac{5}{8}$ in. long. Breast part dark brown with a yellow line underneath. The body is dark brown and lighter, with yellow marks; under side black with yellow spots. Legs with dark brown rings.



2. *E. solitaria*. $\frac{5}{8}$ in. long. Chest part dark brown, black beneath. Body part black with yellow spots; under side black. Legs dark ringed.



3. *E. corticaria*. $\frac{1}{4}$ in. long. Chest part brown, darker in the middle and on edges. Body part dark reddish brown and lighter; under side dark brown. Legs dark ringed.



4. *E. silvatica*. $\frac{5}{8}$ in. long. Chest part dark brown with a darker line in the middle and at each side. Body light brown with yellow spots; underneath dark brown. Legs brown with dark rings.

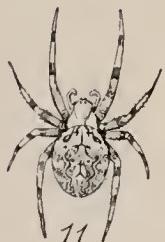


5. *E. nordmanni*. $\frac{1}{2}$ in. long. Chest part gray; underneath light brown or black. Body part white, gray and black; under side black with four yellow spots. Legs dark ringed at the joints and faintly in the middle.

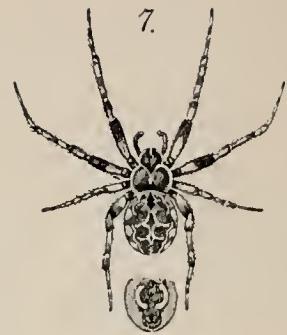


6. *E. cavatica* or *cinerea*. $\frac{3}{4}$ in. long. Chest part gray with long white hairs; under side with a dark stripe, with yellow edge marks. Legs gray faintly ringed.

The next three resemble each other.



7. *E. sclopetaria*. $\frac{5}{8}$ in. long. Chest part dark brown or gray, with no lines; underneath dark brown with a light spot. Body part dark brown and yellow covered thickly with gray hairs. Under side with a dark mark surrounded with semi-circular yellow spots. Legs ringed.
8. *E. patagiata*. $\frac{3}{8}$ in. long. Resembles *E. sclopetaria* but is lighter with a reddish shade.
9. *E. cornuta-strix*. $\frac{3}{8}$ in. long. Chest part reddish brown with three dark stripes. Body part dark brown with a light stripe. Legs yellow brown with dark rings.
10. *E. trifolium*. $\frac{3}{4}$ in. long. Chest part white with three dark brown lines; underneath dark brown, sometimes with a white stripe. Body part reddish brown, or gray with white marks; underneath dark brown. Legs white with dark brown rings.
11. *E. conspicillata-marmorea*. $\frac{3}{8}$ in. long. Chest part dull yellow with indistinct lines; underneath dark brown with a faint light spot. Body part white, yellow or orange, and gray or brown; underneath dark with two semi-circular yellow spots at sides. Legs white with orange or brown rings; thighs orange.

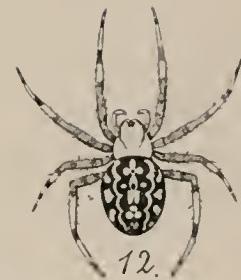




12.

12. *E. insularis*. $\frac{3}{4}$ in. long. Chest part dull yellow with faint lines; under side bright yellow with brown edges. Body part bright yellow or orange and dark brown or purplish black. Legs are white with black rings at joints and in the middle. Thighs bright orange.
13. *E. obesa*. $\frac{3}{4}$ in. long. Chest part wax-like, reddish. Body part light orange, lighter on back, with faint white spots and black line marks. Legs waxy white with reddish bands. Body very inflated.
14. *E. thaddeus*. $\frac{1}{4}$ in. long. Chest part yellowish white, sometimes with black spots at the edges. Body part white or yellow with two dark stripes; underneath a light before a black spot. Legs dull yellow with faint rings.

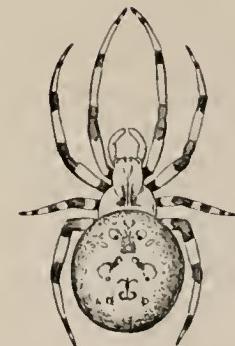
These last five are more or less related to each other, and the next three resemble each other closely.



12.



15. *E. trivittata*. $\frac{1}{4}$ in. long. Chest part light yellow with three dark stripes; underneath bright yellow in the centre. Body part dark brown and light yellow; under side with four or six yellow spots. Legs light yellow with brown rings.
16. *E. pratensis*. $\frac{3}{8}$ in. long. Chest part dull yellow with three faint stripes; underneath brown with a yellow line. Body part brown with yellow lines and six pairs of black spots; under side dark with two curved yellow marks and two spots. Legs light yellow, darker at joints.



13.

17. *Benjaminea domicillorum*. $\frac{3}{8}$ in. long. Chest part brown with three dark stripes; under side black with a yellow line. Body part brown and lighter; under side dark with four to six yellow spots. Legs brownish yellow without rings.
18. *E. cucurbitina-displacata*. $\frac{3}{8}$ in. long. Chest part brownish yellow. Body part light yellow or crimson with three pairs of black dots. Legs brownish yellow without rings, but darker towards the feet.
19. *E. juniperi*. $\frac{1}{4}$ in. long. Chest part light brownish yellow. Body part green, with three white stripes. Legs yellowish brown without rings.
20. *E. alboventris*. $\frac{1}{8}$ in. long. Chest part white. Body part white with a triangular purple spot. Legs white without rings.
21. *E. labyrinthaea*. $\frac{1}{4}$ in. long. Chest part dark brown, white around the eyes; underneath dark brown, and a white line. Body part dark brown and white; a white line underneath. Legs white with narrow dark rings.
22. *E. triaranea*. $\frac{1}{4}$ in. long. Chest part yellowish brown, darker at sides of head and a dark line in the middle; underneath yellow. Body part brownish with four large white, yellowish or reddish spots, and underneath two black spots on the spinnerets and cross-bar mark in the middle. Legs yellowish brown with rings in the middle and on joints of first two pairs of legs,—only at joints in the last two pairs,—the thighs of the last pair are half black.
23. *E. carbonaria*. $\frac{3}{8}$ in. long. Chest part black, head lighter. Body part black with six pairs of white spots above and a white line below. Legs white with broad black rings.



24.  24. *E. placida*. $\frac{5}{16}$ in. long. Chest part yellowish brown, with three stripes and black around the eyes. Body part white and brown; under side black with two white stripes and dots. Legs yellow brown with long, dark spines, without rings.

25.  25. *E. gibberosa*. $\frac{3}{16}$ in. long. Chest part dull yellow with a narrow dark stripe. Body part gray with yellow spots; under side black with two lines and six light spots. Legs dull yellow with black spines and narrow lengthwise stripes.

26.  26. *E. parvula*. $\frac{5}{16}$ in. long. Chest part light gray. Body part dark gray with two white spots; underneath lighter gray. Legs gray with faint rings.

27.  27. *E. foliata*. $\frac{3}{16}$ in. long. Chest part gray or greenish. Body part gray with white; under side yellow. Legs gray or green, darker at joints, the fourth pair the shortest.

28.  28. *E. (Marxia) stellata*. $\frac{1}{2}$ in. long. Chest part brown, a light stripe underneath. Body part angular, light and dark brown. Legs brown ringed.

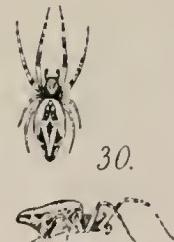
29.  29. *E. infumata*. $\frac{3}{16}$ in. long. Dark brown with black and white marks. Chest part underneath bright yellow with black edges. Body part black below. Legs yellow with irregular ring-like spots.

29.  CYCLOSA.

30.  30. *C. turbinata*. $\frac{3}{16}$ in. long. Chest part dark gray or black. Body part white or gray, with a bump on back; under side black. Legs white with dark rings.



26.



30.

SINGA.

31.  *S. maura*. $\frac{1}{4}$ in. long. Variable. Chest part orange or light yellow with a brown or black head. Body part black or light brown with two or three white stripes. Legs yellow, darker at joints.
32.  *S. maculata*. $\frac{1}{8}$ in. long. Orange. The head and marks on body part black.

ZILLA.

A section of the web, about $\frac{1}{6}$, left without cross-threads.

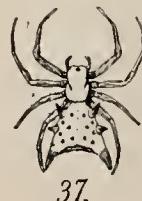
33.  *Z. montana*. $\frac{1}{4}$ in. long. Chest part yellowish white with dark edges and a gray stripe; underneath dark with a yellow stripe. Body part white and black; under side a black and two yellow stripes. Legs yellowish white with dark rings.
34.  *Z. X notata*. $\frac{1}{4}$ in. long. Like the last but three black lines on chest part, and only a black stripe under body.

CYRTARACHNE.

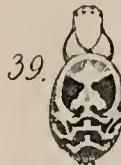
35.  *C. bisaccata*. $\frac{5}{16}$ in. long. Chest part light brown; underneath white. Body part light brown and white with four brown spots. Under side and legs white.

ACROSOMA.

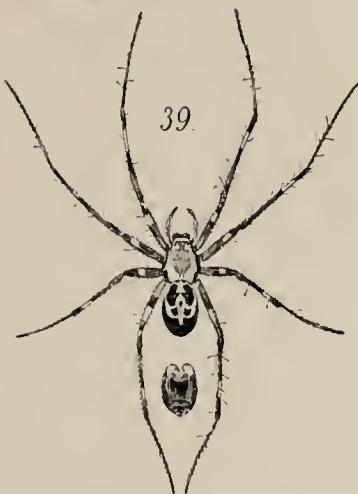
36.  *A. gracile*. $\frac{1}{4}$ in. long. Chest part with three black stripes. Body part dull yellow with black spots and five pairs of spines.
37.  *A. sagittatum*. $\frac{1}{4}$ in. long. Chest part yellowish brown with white edges. Body part triangular, bright yellow with three pairs of spines, red with black points.



38.  38. *A. reduvianum*. $\frac{3}{16}$ in. long. Chest part brownish yellow. Body part white or yellow with a dark spot forward and behind and two pairs of spines. Legs brownish yellow.



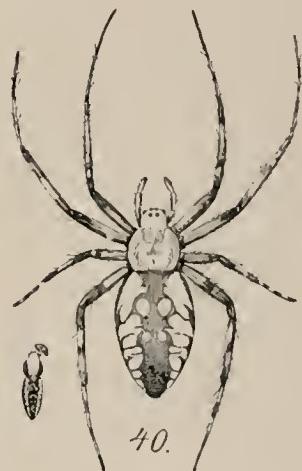
39.  39. *M. menardi*. $\frac{5}{8}$ in. long. Chest part brownish yellow. Body part dark brown and dull yellow; under side brown with two yellow stripes. Legs yellow with dark rings.



META.

ARGIOPE.

40. *A. cophinaria*. $\frac{7}{8}$ in. long. Head black. Chest part covered with silvery hair; underneath black with a yellow stripe. Body part black with yellow marks; under side four spots and two yellow stripes. Legs black. Thighs reddish or yellow. Sometimes dark rose red instead of black.



41.



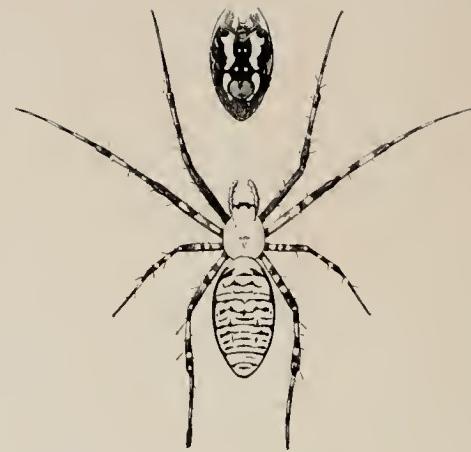
A. argyrapis. $\frac{3}{4}$ in. long. Chest part dark, thickly covered with silvery hair. Body part white or yellow with black cross-bars. The young covered with silvery hair. Under side like *Cophinaria*. Legs light yellow with black rings.

42.



A. venusta. $\frac{1}{4}$ in. long. Chest part green or yellow with two black lines. Body part silvery with a black or yellow stripe. Underneath black with green spots. Legs green with black rings.

ARGYROEPEIRA.



THE WATER SPIDERS.—*TETRAGNATHIA*.

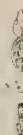
They have long bodies and long, slender legs which they stretch in front and behind when sitting on the web. The web resembles *Epeira's* but is placed inclined or horizontal. The eyes are in two parallel rows.

1. *T. elongata*. $\frac{1}{2}$ in. long. Breast part brownish yellow with three stripes. Body part light and dark brown. Legs brownish yellow with spots.
2. *T. extensa*. $\frac{3}{8}$ in. long. Colors like *T. elongata*.
3. *T. laboriosa*. $\frac{1}{4}$ in. long. Chest part light yellow. Body part silvery white with transparent marks, sometimes green. Under side dark with two light stripes. Legs light yellow.

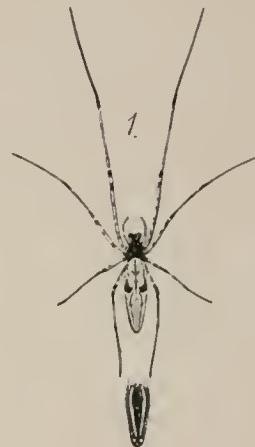


PACHYGNATHA.

Does not spin a web to catch insects. It lives under leaves and stones, on dry land with a *Theridium*-like shaped body and eyes.



4. *P. brevis*. $\frac{1}{4}$ in. long. Brownish yellow with three dark stripes on chest part and a gray and white stripe on body part. Under chest part dark red brown. Under body part gray with two yellow stripes. Legs light yellowish brown.
5. *P. autumnalis*. $\frac{1}{8}$ in. long. Like *Brevis*, but darker and brighter.



THE CURLED-THREAD WEAVERS.—*CINIFLONID.E.*

These spiders have been separated from the others, because the adhesive threads which they spin are curly. They have in front of the usual spinnerets an additional spinning organ called the *cribellum* and on their hind feet a comb-like instrument—a row of stiff spines—called the *calamistrum*, which they use to extract the threads from the *cribellum*.

According to the way in which they make their webs, they are divided into two sub-families.

1. The *Dictynidæ*, otherwise like *Therididae* or some *Drassidae* (*Amaurobius*), spin irregular webs covered with curly threads, on plants, flowers or walls, and watch them from some tube or crevice. They are all very small spiders.
2. The *Uloboridae* build regularly planned webs.

HYPTIOTES.

The triangle spider.

3. *H. cavata*. $\frac{3}{8}$ in. long. Blackish brown with white dots and lines and five pairs of warts on its body part. Its legs and eyes are like *Epeira*; the lower side eyes almost invisibly small. It builds a triangular web, like a section of an orb-web of only four spokes. To be found mostly on pine trees.


ULOBORUS.

4. *U. plumipes*. $\frac{3}{16}$ in. long. Brownish. Body part with black lines and two warts on forward part. Legs with dark rings. The eyes are like *Tetragnatha*. The web resembles an orb-web in shape, but is placed horizontally. The spider guards it from the under side, with his legs extended in a straight line like *Tetragnatha*. It builds in holes or hollow logs.







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